

growth (emphasis added). Of note here is the fact that the cavity is completely surrounded by the monocrystalline material. In addition, the cavity wall is coated with a layer of material that inhibits epitaxial growth.

In Sidner et al., a cavity portion is formed in a substrate that is covered by a diaphragm portion 14 including strain gauges 18 and circuit elements 19 localized in the diaphragm portion 14. In the steps described in the formation of the cavity 16, Sidner et al. show in Figure 2B the initial formation of a moat 28 in the top surface 12a of a wafer 20 having walls on which are grown an oxide layer 30 (see column 4, lines 54-59). After the moat is enlarged to form the cavity 32, the remaining oxide 30 is removed and the cavity 32 is enclosed so that the walls have no coating whatsoever.

Elderstig is directed to a method of producing cavity structures, and in particular “capillary fluid flow systems” in which a flow channel is formed in a substrate (see column 2, lines 54-60). The cavity is elongated and formed to be continuous for use in conducting gas or liquid flow for flow measuring and other uses (see column 3, line 55 through column 4, line 2). Elderstig specifically teaches that the flow channel is coated with a layer of silicon dioxide 5 that is deposited on a quartz substrate. Nowhere does Elderstig teach or suggest a completely enclosed cavity in a monocrystalline semiconductor substrate coated with a material inhibiting epitaxial growth.

In summary, Elderstig teaches forming a capillary or flow structure that is not completely surrounded by monocrystalline material, and is not coated with a layer of material inhibiting epitaxial growth.

Moreover, because Sidner et al. specifically teaches removing the oxide coating from the surface of its cavity, one of ordinary skill would not be motivated to look to the teachings of Elderstig to coat the cavity of Sidner et al. because Sidner et al. does not want any coating on the cavity walls. Moreover, one could not coat the cavity of Sidner et al. with the quartz material of Elderstig. Thus, even if the combination were attempted as the Examiner suggests, it would fall short of the claimed invention.

In addition, the epitaxial growth inhibiting layer of the present invention maintains a constant volume of the cavity during subsequent epitaxial growth steps. In contrast,

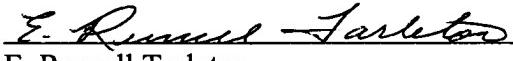
Sidney et al. describe a reduction in volume during epitaxial growth, and Elderstig does not teach that the deposited oxide layer has the function of avoiding the modification of cavity volume during manufacturing steps. Thus, it would not be obvious to modify Sidney et al. to include an oxide inhibiting layer covering the cavity walls.

In view of the foregoing, applicants respectfully submit that claim 1 and dependent claims 3-5 are clearly allowable over the combination of Elderstig and Sidner et al. All claims now being in condition for allowance, early and favorable action passing this case to issuance is respectfully requested.

In the event the Examiner finds minor informalities that can be resolved by telephone conference, the Examiner is urged to contact applicants' undersigned representative by telephone at (206) 622-4900 in order to expeditiously resolve prosecution of this application.

Respectfully submitted,

SEED Intellectual Property Law Group PLLC


E. Russell Tarleton
Registration No. 31,800

ERT:jl

701 Fifth Avenue, Suite 6300
Seattle, Washington 98104-7092
Phone: (206) 622-4900
Fax: (206) 682-6031

778539_1.DOC